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NASA: 45 YEARS OF EXPLORATION



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New DEVELOPments for Local Communities

What do you get when you combine students from high schools and colleges nationwide with local communities in need of sophisticated NASA research and data? A beautiful partnership through NASA's DEVELOP program.

DEVELOP is a student-led program working to bridge the gap between NASA Earth science and local communities. DEVELOP students create pilot visualization projects that incorporate Earth science information and remote-sensing observations. These visualizations demonstrate to communities how NASA research and technology can aid in addressing local problems. The students present final research and visualization products at town hall meetings and high-level national outreach forums.

The projects are conducted through NASA's collaboration with other federal agencies, academia, industry and associations, as well as state, local and tribal governments. Since 1998, over 300 students

representing 22 states, 31 colleges and 15 high schools have participated. DEVELOP students have established 18 Earth Science Education Computer Labs, using excess NASA equipment, in schools throughout the country.

The 2003 DEVELOP projects have used a variety of data to complete projects designed for a variety of customers, including associations, tribal, local and state governments.

The Monterey County departments of health and information technology, as well as the North Salinas Valley mosquito abatement district in California, sought DEVELOP students' help with the westward spread of West Nile Virus. The team identified the mosquito habitat, correlated their habitat information with population data and created a risk map for the area.

Another project, requested by the Louisiana governor's office, focused on the problem of Louisiana's coast slowly

sinking into the Gulf of Mexico, known to scientists as "subsidence." DEVELOP students worked to quantify subsidence rates in Louisiana from geodetic data in order to demonstrate the changes along Louisiana's coastline using NASA satellite imagery.

One team of students created an inexpensive, portable Computer Automated Virtual Environment (CAVE). Most current CAVEs are large immobile virtual reality computer environments that are extremely expensive. This project may be used by tribal, state and local governments; the Aviation Safety Program and NASA outreach groups to provide compelling visualizations of Earth science data.

In applying Earth science to homeland security concerns, another DEVELOP team worked for the Commonwealth of Virginia Office of Homeland Preparedness to tackle the potential disabling of major transportation systems and the effects on emergency management systems. They assessed and mapped the critical transportation and emergency infrastructures and produced a three-dimensional visualization to demonstrate the projected benefits of alternate traffic routing in the Hampton Roads area during crises.

DEVELOP student teams are demonstrating the practical application of NASA Earth science data to help solve problems throughout the country. Providing communities with improvements in their decision-making efforts while inspiring the next generation of scientists continues to be at the forefront of the ongoing DEVELOP program.

DEVELOP is managed at NASA Headquarters by the Earth Science Applications Division. Center activity is led by Langley Research Center in partnership with Ames, Stennis and Marshall.



DEVELOP students from across the nation with Arkansas Governor Mike Huckabee at a governor's conference in Biloxi, Miss., in June 2003.